

India's use of CITES Appendix III

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Abstract

India is one of the few countries to have made extensive use of Appendix III of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), compared to other Parties to the Convention. Here we examine India's use of Appendix III and illustrate its benefits and limitations, using examples of species listed by India in Appendix III. Since its ratification of CITES in 1976, India has listed 39 taxa in Appendix III, 27 species and six subspecies listings of which are still current. Through the listings, important international trade data was gathered, some of which have supported the decision for application to a different CITES Appendix with stricter trade controls. However, the majority of the species have been listed for more than 30 years and a re-evaluation of their listing status and suitability for Appendix III may be warranted. The same applies to the reservations entered by several Parties. We provide recommendations on how to make some of the current listings more effective and encourage other Parties to evaluate their native, non-CITES listed species and, if warranted, to make use of Appendix III to contribute to the conservation of their native wildlife.

Keywords

conservation, policy, threatened species, wildlife trade

Introduction

Global biodiversity is facing a crisis with many species on a rapid path to extinction (WWF 2018; IPBES 2019; UNODC 2020). One major contributor is the illegal and/or unsustainable trade of wildlife, which has resulted in population declines or local

extinctions of a vast number of species and continues to be a significant threat to an ever-increasing number of species globally (Van Uhm 2016; WWF 2018; Stanford et al. 2020). Commercialisation of the wildlife trade sees species exploited for a variety of purposes, including as pets, food, medicine, luxury items, etc. and feeds both domestic and international market demands. One means to ensure that legal international wildlife trade does not threaten the survival of wild plant and animal species, is through the use of provisions of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Since it entered into force in 1975 the Convention has been adopted by 183 Parties (i.e., member states), as of January 2021 (<https://cites.org/eng/disc/parties/index.php>), and regulates international trade in over 38,000 species. These species are listed in three Appendices according to their apparent need of protection and regulation of international trade (<https://cites.org/eng/disc/species.php>). Appendix I includes species threatened with extinction, for which international trade is only permitted in exceptional circumstances. Appendix II includes species that may become threatened in the future if international trade is not regulated, and Appendix III contains species that are protected in a country, and is a way to seek other Parties' assistance for controlling the trade in the listed species (<https://cites.org/eng/app/index.php>).

CITES Appendix III

Appendix III is seldom used, with under 1% of all CITES taxa listed in Appendix III (<https://cites.org/eng/disc/species.php>). In this paper we focus on Appendix III to explore how it has been used in practice, using India as a case study, which in comparison to other Parties, has the most listings in Appendix III (Fig. 1).

For the right candidate species, Appendix III can have multiple benefits, including: i) a comparatively easier listing and permitting process; ii) the provision of a legal basis for law enforcement bodies in consumer countries to seize illegal specimens; iii) monitoring of trade patterns and volumes of listed species; as well as iv) the prevention of overexploitation of at-risk species (Janssen and Krishnasamy 2018; Heinrich et al. 2021). The species that are listed should fulfil certain criteria, detailed recommendations for which are outlined in Res. Conf. 9.25 (Rev. CoP18); <https://cites.org/eng/res/09/09-25R16.php>). As a minimum, the criteria that should be fulfilled are that the species is: i) within the jurisdiction of the listing Party (i.e., a native species); ii) subject to national regulations for the conservation of the species (i.e., a nationally protected species); and iii) found, or suspected to be, in international trade and there are indications that the cooperation of the Parties is needed to monitor and control this trade. The criteria outlined in Annex I of Res. Conf. 9.25 (Rev. CoP18) are non-binding recommendations, not mandatory requirements for an Appendix III listing, but theoretically, the more of them are fulfilled, the more effective the listing is likely to be.

Appendix III follows distinct listing and permitting procedures compared to Appendix I and II. For a species to be listed, de-listed or moved between Appendix I and II the Parties meet every 3 years at the Conference of the Parties (CoP) and each

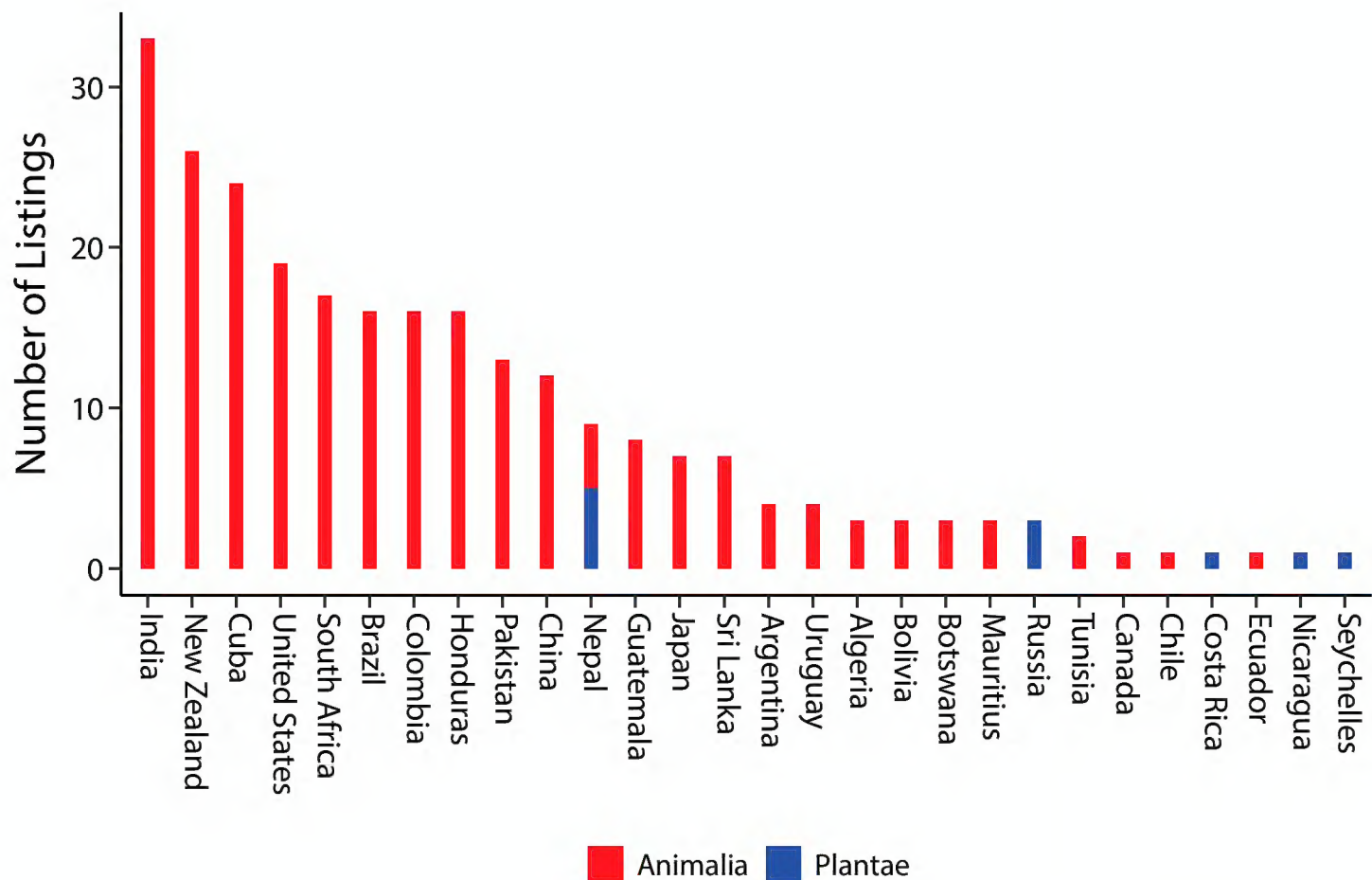


Figure 1. The 28 countries that currently have taxa listed in CITES Appendix III, as of May 2021.

change in species status requires support from a two third majority of the Parties to be accepted (CITES Article XV; <https://cites.org/eng/disc/text.php#XV>). In contrast, an Appendix III listing is comparatively easier and can be proposed unilaterally by any Party at any time by simply notifying the CITES Secretariat. The submitting Party is asked to make any domestic laws and regulations (and interpretations thereof) applicable to the protection of the proposed species available to the Secretariat. They also need to submit any changes to the legislation (if any) for as long as the species is listed in Appendix III (CITES Article XVI; <https://cites.org/eng/disc/text.php#XVI>). It is also possible to only list certain parts or derivatives of a species, or only national populations; however, this is not generally recommended as it may complicate enforcement efforts considerably. Any Party that opposes the listing can enter a Reservation. If not otherwise regulated through national legislation (see e.g., Council Regulation (EC) No 338/97 for the case of the European Union (EU)), the Party is then treated as a non-Party in regards to the species it has entered a Reservation for.

In addition to the comparatively easier listing process, the permit requirements for Appendix III are less strict. As such, export permits are only required from the listing Party, while all other Parties need to issue a certificate of origin for the species in question. In the case of a re-export from any country, a re-export permit needs to be issued (CITES Article V; <https://cites.org/eng/disc/text.php#V>). However, in contrast to species listed in Appendix I and II, non-detriment findings (NDF) are not required for species listed in Appendix III prior to export; not even from the country that listed the species (CITES Article V; <https://cites.org/eng/disc/text.php#V>). This significantly reduces

the workload for CITES Scientific Authorities and results in less bureaucracy associated with trade in Appendix III species. On the other hand, it also leads to less control and efficacy, as NDFs are an important tool for ensuring the sustainability of trade.

India and the wildlife trade

One of the few countries to have used Appendix III extensively in the past compared to other Parties is India (Fig. 1). India is considered one of the 12 megadiverse countries in the world, home to an exceptionally high diversity of plant and animal life (Ghosh-Harihar et al. 2019). India is also a significant wildlife trafficking hub, acting as a source, transit and destination country, which threatens a multitude of species within its borders and globally (Misra 2003; Badola et al. 2019; Wong and Krishnasamy 2019; Jain 2020). Wildlife seizures occur daily throughout the country, revealing the extensive wildlife trade (Arun 2019; Badola et al. 2019; Chatterjee 2019; UNEP 2019; Wong and Krishnasamy 2019; Zaugg and Suri 2019).

In the context of CITES, India is considered a category 2 country under the CITES National Legislation Project (https://cites.org/eng/legislation/National_Legislation_Project), meaning that only 1 – 3 of the four requirements for effective implementation of CITES have been met, as outlined in Res. Conf. 8.4 (Rev. CoP15). Essentially, India has no national law to implement CITES (UNODC 2017) and as such does not include protection of non-native species, which hinders enforcement action against illegally sourced non-native wildlife once it has entered the country (see below). At the 69th meeting of the Standing Committee (SC) in 2017, India was identified as one of the priority Parties needing further attention of the SC and requiring additional legislation to be prepared to meet the requirements of the Convention (SC69 Doc. 27 (Rev.1); <https://cites.org/eng/com/sc/69/index.php>).

The international trade of wildlife in India as it pertains to CITES listed species is governed under several laws including the Wild Life Protection Act 1972, Foreign Trade Act 1992, and Foreign Trade Policy. The main provisions of CITES are enforced through the Customs Act 1962. The principle law governing wildlife protection on a national basis is the Wild Life Protection Act 1972, which has been amended several times, i.e., in 1991, 2002, 2003 and 2006, e.g., to include new species, higher penalties, and stronger protection. Native wildlife is protected to varying degrees under Schedules I–VI of this Act. In very general terms, it prohibits the hunting, killing, unlicensed possession, unlicensed transport, and any mode of transfer, apart from inheritance, of protected species or products thereof, such as trophies, meat, animal articles, etc. This includes domestic and international commercial trade in wild individuals of protected species unless specifically permitted otherwise. There are provisions within the Act for certain exceptions, e.g., the killing of a protected species is permissible if it constitutes a threat to life; hunting permits are given if a species is considered a threat to property (e.g., crops); or export of species for scientific research/ exchange between zoos, etc. However, the Wild Life Protection Act does not include governance

of non-native species and this severely impedes efforts to enforce the law, including the prosecution or penalties associated with the smuggling of non-native species within and across India's borders. The Foreign Trade Act 1992 essentially makes provisions for prohibiting, restricting and/or regulating goods subject to import and export including wildlife. Under the Foreign Trade Policy, governed by the Act, the principles on which wildlife and their products that can, or are prohibited to be, imported or exported are provided based on consultation with the CITES Management Authority, which is in turn enforced through the Customs Act 1962 that has the power to prohibit the importation and exportation of goods, including wildlife.

Methods

In order to explore the use of Appendix III we collated a list of taxa that have been listed by India in Appendix III at any point in time, based on the history of CITES listings (www.speciesplus.net). We focussed on three of those species i.e., Malabar civet (*Viverra civettina*), Siberian weasel (*Mustela sibirica*), and Red fox (*Vulpes vulpes*), by summarising trade data for these species to further assess and exemplify the benefits, suitability and challenges of listing species in Appendix III.

Trade data were downloaded in November 2020 from the CITES trade database (trade.cites.org). Law Enforcement Management Information System (LEMIS) data for the Malabar civet were obtained through a Freedom of Information Request. Species native ranges were obtained from the CITES species checklist (www.speciesplus.net) and their respective IUCN status from the IUCN Red List (www.iucnredlist.org). We note that we refer to the listed taxa using the taxonomy used in CITES, but we acknowledge that this may not necessarily reflect the most up-to-date taxonomic information.

Results and discussion

Since its ratification of the Convention in 1976, India has listed 33 species and six subspecies in Appendix III. All of them were first listed before 1990 and since their listing, six of the 33 species have subsequently been moved to Appendix II or I. Currently, India still has 27 species and six subspecies listed in Appendix III (Table 1).

Benefits of CITES Appendix III listings

Endemic species and detection of illegal trade

It has been remarked that endemic species are especially well suited for a listing in Appendix III, as the opportunity for laundering the species through other range states is

Table I. The (sub-) species currently and historically listed by India in CITES Appendix III, including their IUCN status (if assessed, with CR = Critically Endangered, DD = Data Deficient, LC = Least Concern, NT = Near Threatened, VU = Vulnerable), potential transfers to different Appendices (App I, II), current reservations by the Parties, and Protection Status in India (indicating the Schedule (Sch) of the Wild Life Protection Act 1972 under which the species is listed).

Family	Scientific name	Common name	IUCN status	App III addition	App II addition	App I addition	Current reservations	Protection status in India
Canidae	Canis aureus	Golden Jackal	LC	1989	–	–	2 countries	Sch II, Part II
	Vulpes bengalensis	Bengal Fox	LC	1989	–	–	–	Sch II, Part II
	Vulpes vulpes griffithi			1989	–	–	25 countries	Sch II, Part II
	Vulpes vulpes montana			1989	–	–	24 countries	Sch II, Part II
	Vulpes vulpes pusilla			1989	–	–	25 countries	Sch II, Part II
Colubridae	Atretium schistosum	Olive Keelback Water Snake	LC	1984	–	–	–	Sch II, Part II
	Cerberus rynchops	South Asian Bockadam	LC	1984	–	–	–	Sch II, Part II
	Xenochrophis piscator	Checkered Keelback		1984	–	–	–	Sch II, Part II
	Xenochrophis schnurrenbergeri	Bar-necked Keelback		1984	–	–	–	Sch IV
	Xenochrophis tytleri	Tytler's Keelback		1984	–	–	–	Sch IV
Elapidae	Ptyas mucosus	Oriental Ratsnake		1984	1990	–	–	Sch II, Part II
	Naja kaouthia	Monocled Cobra	LC	1984	1990	–	–	Sch II, Part II
	Naja naja	Spectacled Cobra		1984	1990	–	–	Sch II, Part II
	Naja oxiana	Central Asian Cobra	DD	1984	1990	–	–	Sch II, Part II
	Ophiophagus hannah	King Cobra	VU	1984	1990	–	–	Sch II, Part II
Herpestidae	Herpestes edwardsi	Indian Grey Mongoose	LC	1989	–	–	–	Sch II, Part II
	Herpestes fuscus	Brown Mongoose	LC	1989	–	–	–	Sch II, Part II
	Herpestes smithii	Ruddy Mongoose	LC	1989	–	–	–	Sch II, Part II
	Herpestes urva	Crab-eating Mongoose	LC	1989	–	–	–	Sch II, Part II
	Herpestes vitticollis	Stripe-necked Mongoose	LC	1989	–	–	–	Sch II, Part II
Mustelidae	Herpestes javanicus auropunctatus ¹		LC	1989	–	–	–	Sch II, Part II
	Martes flavigula	Yellow-throated Marten	LC	1989	–	–	–	Sch II, Part II
	Martes gwatkinsii	Nilgiri Marten	VU	1989	–	–	–	Sch II, Part II
	Mustela altaica	Altai Weasel	NT	1989	–	–	24 countries	Sch II, Part II
	Mustela kathiah	Yellow-bellied Weasel	LC	1989	–	–	24 countries	Sch II, Part II
	Mustela sibirica	Siberian Weasel	LC	1989	–	–	24 countries	Sch II, Part II
	Martes foina intermedia			1989	–	–	3 countries	Sch II, Part II
	Mustela erminea ferghanae			1989	–	–	24 countries	Sch I, Part I
Sciuridae	Marmota caudata	Long-tailed Marmot	LC	1989	–	–	–	Sch II, Part II
	Marmota himalayana	Himalayan Marmot	LC	1989	–	–	–	Sch II, Part II
Ursidae	Melursus ursinus	Sloth Bear	VU	1988	–	1990	–	Sch I, Part I
Viperidae	Daboia russelii	Russell's Viper		1984	–	–	–	Sch II, Part II
	Arctictis binturong	Binturong	VU	1989	–	–	–	Sch I, Part I
	Paguma larvata	Masked Palm Civet	LC	1989	–	–	–	Sch II, Part II
	Paradoxurus hermaphroditus	Common Palm Civet	LC	1989	–	–	–	Sch II, Part II
	Paradoxurus jerdoni	Brown Palm Civet	LC	1989	–	–	–	Sch II, Part II
	Viverra civettina	Malabar Civet	CR	1989	–	–	–	Sch I, Part I
	Viverra zibetha	Large Indian Civet	LC	1989	–	–	–	Sch II, Part II
	Viverricula indica	Small Indian Civet	LC	1989	–	–	–	Sch II, Part II

1 – Listed as Herpestes auropunctatus.

essentially non-existent (Wijnstekers 2018; Heinrich et al. 2021). For any species in Appendix III, the listing Party has to issue an export permit, while any other exporting country has to issue a certificate of origin to show that the individual did not originate

from a country which has prohibited its export and trade. If a species is native to several countries, which have not all listed the species in Appendix III, a person wishing to circumvent Appendix III could apply for a certificate of origin in another native country that has not listed the species in Appendix III and allows its export, claiming that the specimen originates from that country instead.

In the case of India, only four of the 33 currently listed (sub-) species are Indian endemics. This includes the Malabar civet, which has been listed in Appendix III since 1989. The Malabar civet is Critically Endangered and only occurs in the Western Ghats in the south of India (Mudappa et al. 2016). According to the IUCN Red List fewer than 250 mature individuals remain (Mudappa et al. 2016). It is threatened by habitat loss and potentially hunting as well as retaliatory killings (Mudappa et al. 2016). From the CITES database there are nine records involving 182 wild caught Malabar civets since 1989 (Table 2). This represents a very large number of Malabar civets given their precarious state. However, in all but one case the origin of the animals is reported as unknown. In the one case where the origin country was reported it came from Vietnam, where it does not occur. Since the Malabar civet is an Indian endemic species, all trade instances of wild-caught individuals must have originated in India. As their export from India is strictly prohibited, all of these instances thus represent illegal trade. CITES permits should never have been issued and the animals should have been seized by the relevant authorities. Interestingly, since 2010 the majority of trade records involving Malabar civets were exported from Africa.

Further, if looking at trade records of Malabar civets recorded in LEMIS, none of these match the trade records recorded in CITES (and vice versa; Table 2 and Suppl. material 1: Table S1). Likewise, the incidents recorded in LEMIS should not have been cleared for import in the US, as these would have been in direct violation of the Lacey Act. It is a possibility that some of the recorded trade incidents, both in CITES and LEMIS, are based on species misidentifications or documentation errors (noting that all of the wild caught Malabar civets recorded in LEMIS, supposedly originated in Africa), however, the international trade records should be re-examined and verified, because with a critically endangered species that only occurs in such small numbers like the Malabar civet, even the smallest amount of offtake and trade can have detrimental consequences.

Table 2. Trade data reported to CITES for the Malabar civet (*Viverra civettina*) from 1989 – 2020. AU = Australia, CM = Cameroon, NL = The Netherlands, NZ = New Zealand, PH = The Philippines, PL = Poland, SG = Singapore, TG = Togo, US = United States of America, VN = Vietnam.

Year	Importer	Exporter	Origin	Source	Quantity (I/E)	Commodity	Purpose
1992	US	PH	VN	Wild	1/–	Skin	–
1995	US	SG	–	Seized	1/–	Body	Commercial
1998	US	VN	–	Wild	–/135	Live	Commercial
2010	PL	CM	–	Wild	1/–	Trophy	Hunting
2014	NL	TG	–	Wild	–/9	Skins	Commercial
2015	NL	TG	–	Wild	–/25	Live	Commercial
2015	NZ	AU	–	Wild	–/1	Skin	Personal
2015	NZ	AU	–	Wild	–/1	Skull	Personal
2015	US	TG	–	Wild	–/8	Live	Commercial

Documentation of international trade data for species of conservation concern

An Appendix III listing can have further benefits, for example, through the recording of international trade data – crucial information that is often missing for many traded non-CITES wildlife species (Janssen and Shepherd 2018). These could ultimately aid in determining if a species needs better protection from international trade or not. It should be noted that in reality these data can be incomplete, as many Parties seem unwilling to undertake the administrative burden to document trade in Appendix III species (Res. Conf. 9.25 (Rev.CoP17); Wijnstekers 2018), even though they are required to do so (CITES Article VIII; <https://cites.org/eng/disc/text.php#VIII>). However, based on the available trade data it can theoretically be evaluated whether the species may be better suited to be moved to a different Appendix (I or II), be removed from CITES completely, or kept in Appendix III.

For example, six species that had been listed by India in Appendix III were subsequently transferred to Appendix II, i.e., Monocled Cobra (*Naja kaouthia*), Spectacled Cobra (*Naja naja*), Central Asian Cobra (*Naja oxiana*), King Cobra (*Ophiophagus hannah*), and Oriental Ratsnake (*Ptyas mucosus*); and Appendix I, i.e., Sloth Bear (*Melursus ursinus*). Among the central arguments supporting the inclusion of the five snake species to Appendix II was trade data gathered while the species were included in Appendix III, as well as illegal trade data supporting the transfer (CoP7 Proposals 45, 46, and 47; <https://cites.org/eng/cop/07/prop/index.php>). The five snake species were transferred to Appendix II approximately six years after their initial listing in Appendix III, while the Sloth bear was moved to Appendix I approximately two years after its initial listing in Appendix III (Table 1). The Appendix III listing for the Sloth bear was not contributing enough to its conservation, especially in light of its rapidly dwindling populations (CoP7, Proposal 12; <https://cites.org/eng/cop/07/prop/index.php>). Legal trade was essentially not permitted or recorded, while illegal trade continued to occur. Additionally, the Sloth bear was being used to launder parts and derivatives of other bear species that were at the time already included in Appendix I. To better protect the Sloth bear, as well as other bear species, *Melursus ursinus* was transferred to Appendix I in 1990.

Species suitability and the importance of re-evaluation

The 33 taxa that have been listed by India, and which are still included in Appendix III today, have been listed for over 30 years each and an evaluation of the effectiveness of the listings and the ongoing suitability of the species may be warranted. Ideally, Appendix III should be an interim, not a long-term solution. Assistance for the review of Appendix III species can be sought from the Animals and Plants Committees of CITES (see Res. Conf 9.25 (Rev CoP18), paragraph 5) and Parties are urged to undertake these reviews at regular intervals (Res. Conf. 9.25 (Rev CoP18), paragraph 6).

For example, another species currently listed in Appendix III by India that would potentially benefit from a transfer to Appendix II is the Siberian weasel (*Mustela sibirica*) (see Res. Conf 9.24 (Rev CoP17); <https://cites.org/sites/default/files/document/E->

[Res-09-24-R17.pdf](#) for Appendix II criteria). It has a wide distribution, occurring in at least 12 countries and is currently listed as Least Concern by the IUCN Red List (Abramov et al. 2016). The Siberian weasel is heavily traded, mostly for its fur and tail hair. CITES trade data reveals that since 1990 more than 2500 trade incidents occurred worldwide, the majority of which (>70%) involved wild-caught Siberian weasels. Its traded hair alone made up 3% of the value of all European animal imports in 2016 (UNEP-WCMC 2018). The total value of the hair in the EU in 2016 alone was estimated at ~40.2 million Euros, the majority of which (81%) was from wild-caught Siberian weasels exported from China (UNEP-WCMC 2018). Wild-sourced Siberian weasel hair traded for commercial purposes also accounted for 4% of the value of animal exports from the EU. Exports from the United Kingdom to the United States accounted for 99% of this trade (UNEP-WCMC 2018). At first glance, the Siberian weasel does not appear an ideal candidate for an Appendix III listing, following the criteria outlined in Res. Conf. 9.25 (Rev.CoP18); especially owing to its wide distribution, perceived non-threatened global status, and the fact that it is only listed by India and none of its other range states. There are 24 (European) countries that have entered a reservation to the Siberian weasels' listing in Appendix III, which from a trade perspective appears unreasonable, as the small mustelid is evidently heavily traded and in volumes that hardly seem sustainable in the long term – noting that this data is only available due to its listing in Appendix III. Given the large number of Siberian weasels that are killed and traded each year, further analysis into this trade is urgently needed to clarify whether the trade is sustainable or not, and how it is impacting their populations. From a listing perspective, and pending further research, Siberian weasels seem to be better suited to be included in CITES Appendix II, as it appears that they do need better protection from and regulation of international trade as is currently the case. As such, the EU, as one of the main demand regions for Siberian weasel products, should re-think their current reservations in regards to the Siberian weasel's listing in Appendix III (see also UNEP-WCMC 2015) and support measures to improve trade controls and regulations in the species.

Challenges of CITES Appendix III listings

One of the often-mentioned downfalls of a listing in Appendix III is that it may become ineffective for species with a large native range, spanning several countries, as e.g., the potential for laundering is very high, and the listing is often hindered by a lack of cooperation and communication between the relevant range states (Willoek et al. 2004; Wijnstekers 2018). For such species it is often more difficult to detect documentation errors and potential incidents of illegal trade, as in the case for example for the endemic Malabar civet, and cooperation with other range states would be beneficial. In the case of India, this has only occurred once, when Pakistan joined the Appendix III listing for the Indian Grey Mongoose (*Herpestes edwardsi*) in 2014, noting however, that none of the other ~14 range states have joined the listing and that there are only three CITES trade records in total for the species and none since 2012. For some of

the other non-endemic species with a larger native range, it may be possible to make the existing Appendix III listing more effective. For example, the Olive Keelback Water Snake (*Atretium schistosum*), Brown Mongoose (*Herpestes fuscus*), Ruddy Mongoose (*Herpestes smithii*), Stripe-necked Mongoose (*Herpestes vitticollis*), Himalayan Marmot (*Marmota himalayana*), and Bengal Fox (*Vulpes bengalensis*) occur in four or less range states each. Thus, if these (relatively few) range states would cooperate and join the listing(s), law enforcement would be greatly facilitated and the opportunity for laundering these species through other range states greatly reduced. This is only useful of course if the species fulfil other Appendix III criteria, which should be assessed on a case-by-case basis. A cooperative listing of the aforementioned species seems more realistic, as compared to other listed species with a comparatively larger native range.

The native range of some of the other listed species involves several (i.e., more than 10) countries and it is unlikely that all of them would join the listing of the species in question. Especially if the conservation situation for the species differs in the many different range states. They may not be perceived as threatened in some countries, while the situation may be different in other countries. For example, countries have entered reservations for 26 of India's listed taxa throughout history, nine of which are still current. It is noteworthy that all current reservations are exclusively for fur-bearing animal species of varying commercial value, and the majority of the reservations (five out of nine) were entered for subspecies. Three of these are subspecies of the Red fox (*Vulpes vulpes*). The number of extant fox taxa in India has been of much debate, including subspecies of the Red fox (Maheshwari et al. 2013). Currently, India has included three subspecies of the Red fox (*Vulpes vulpes griffithi*, *V. v. montana* and *V. v. pusilla*) in Appendix III since 1989. Of note is that *V. v. griffithi* is thought to only occur in Afghanistan and Pakistan, although camera trap surveys have captured this species in India, close to the Pakistan border (Maheshwari et al. 2013). There is very little information on international trade for the three subspecies. Based on the CITES Trade Database, there are only 35 records that document the trade in Red foxes since the subspecies were listed in 1989 up to 2018 and none involving India. Of these, 15 records specifically mention the three subspecies, i.e., *V. v. griffithi* (five records), *V. v. montana* (seven records) and *V. v. pusilla* (three records), mostly involving small quantities of skin pieces or garments made from their skins. At least five records reveal international trafficking; one involving a seizure of *V. v. griffithi* in the US from Pakistan; and four seizures involving *V. v. montana* in New Zealand exported from China, the United Kingdom, Hungary and the US respectively. Considering their relatively wide distribution in the region, it is impossible to determine whether any of these incidents had illegal origins in India. According to the Wildlife Protection Society of India (WPSI), from 1974 to 2011 at least 245 skins, 12 skin caps, 85 garments made of skins and seven skin coats made from Red foxes have been confiscated from illegal trade in India; however, the subspecies were not distinguished and no cases were recorded since 2011 (WPSI, pers. Comm.). Currently, there does not appear to be much documented evidence of international trade in the three Red fox subspecies, and it is thus questionable whether an Appendix III listing is suitable for them.

It could be argued that the inclusion of subspecies is relevant, as they can essentially be treated as 'endemics', depending on the actual geographic range of the subspecies in question. However, one issue of listing subspecies and/or national populations in CITES generally, but Appendix III in particular, is the potential for misidentifications, especially for very similar looking (sub-)species, which makes law enforcement extremely difficult (Alfino and Roberts 2019). The listing of subspecies and national populations of species in Appendix III in particular should therefore be treated with caution (see also Wijnstekers (2018)) to avoid the potential of laundering similar looking subspecies or national populations as non-CITES listed conspecifics. Further, the 'look-alike' provisions that are provided for Appendix II species (Res. Conf. 9.24 (Rev. CoP17); <https://cites.org/eng/res/09/09-24R16.php>), are not applicable to Appendix III species and apart from assessing the target species suitability for Appendix III, it may be beneficial to consider whether similar looking non-CITES species in trade could be used to launder the protected species. In some cases, it may be better to include species instead of national populations or subspecies to minimise identification and therefore enforcement issues. Split-listings that place some species populations inside Appendix I or II and the remaining populations outside the Appendices should generally not be permitted (Res. Conf. 9.24 (Rev.CoP17)), and the same could be argued for national populations of Appendix III because of the aforementioned issues. Further, in the past concerns have been raised about the overuse of Appendix III, mostly due to species being listed that are not found in international trade (Wijnstekers 2018). In the case of the three Red Fox subspecies, it is possible that instances of trade were not recorded, as the subspecies could not be identified and distinguished. In this case it may make more sense to list the entire species *Vulpes vulpes* in CITES to monitor trade, instead of only a few subspecies. For *V. vulpes* international trade is evidently occurring in large volumes, especially for the fur industry (Wilson et al. 2013), but the species may not fulfil other listing criteria (see Res. Conf. 9.24 (Rev.CoP17)). However, if the concern is for the subspecies in particular and these are not traded internationally, but threatened by other (domestic) issues, they should not be listed in CITES, unless there is further evidence that international trade (legal or illegal) in these subspecies is occurring, which we may not have captured here.

Apart from the difficulties of identifying subspecies, another possibility for why trade may not have been captured for the Red fox subspecies is that trade for personal purposes in Appendix III species does not require any documentation under CITES (https://cites.org/eng/imp/Exemptions_and_special_procedures). It is the only 'true' exemption that exists in CITES, as opposed to any of the other exemptions, e.g., captive bred, or pre-convention specimens, which require special procedures and documentation (Res. Conf. 12.3 (Rev. CoP18); <https://cites.org/sites/default/files/document/E-Res-12-03-R18.pdf>). It is possible for Parties to take stricter domestic measures in regards to the personal and household effects exemption (Res. Conf. 13.7 (Rev.CoP17); <https://cites.org/eng/res/13/13-07R16.php>), but not many Parties do for Appendix III species. It is therefore possible that legal trade in Appendix III species does occur, but is not recorded in CITES (see also Willoek et al. (2004)).

Conclusions

India has listed 33 species and six subspecies in Appendix III, 33 listings of which are still current. The listings have led to important insights into international trade; however, the majority of the species have been listed for more than 30 years and a re-evaluation of their listing status and suitability for Appendix III is warranted. The same applies to the reservations entered by several Parties, as it appears that at least some of the species that Parties have entered reservations for are, in fact, heavily traded internationally and may even require better protection and regulation from international trade than is currently the case. Some of the taxa listed by India appear to be well suited for an Appendix III listing, while others may benefit from being transferred to a different Appendix, or could potentially be removed from Appendix III, for example if no considerable international trade occurs. The assessments should be made on a case-by-case basis, and evaluated based on the recommendations made in CITES Res. Conf. 9.25 (Rev.CoP18).

While species should fit certain criteria for a listing to be effective, Appendix III can still have advantages even if species are not ‘ideal’ candidates. For example, international trade data is recorded, which is crucial information that is often lacking for non-CITES species. For the right candidate species, Appendix III can have considerable benefits, and other Parties should consider its use for their native wildlife species, especially as an interim solution. However, despite a listing in CITES and the legal protection that is granted through the Convention, illegal trade may still occur. A CITES listing, whether in Appendix I, II, or III, can only contribute to species conservation if Parties implement and enforce the requirements of the Convention.

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References

- Abramov AV, Duckworth JW, Choudhury A, Chutipong W, Timmins RJ, Ghimirey Y, Chan B, Dinets V (2016) *Mustela sibirica*. The IUCN Red List of Threatened Species 2016: e.T41659A45214744. <https://doi.org/10.2305/IUCN.UK.2016-1.RLTS.T41659A45214744.en> [Accessed on 12.01.2021]
- Alfino S, Roberts DL (2019) Estimating identification uncertainties in CITES ‘look-alike’ species. *Global Ecology and Conservation* 18: e00648. <https://doi.org/10.1016/j.gecco.2019.e00648>

- Arun T (2019) Red Sand Boa Worth \$71,000 Seized, One Person Arrested. <https://www.ib-times.com/red-sand-boa-worth-71000-seized-one-person-arrested-2860081> [Accessed on 12.01.2021]
- Badola S, Choudhary AN, Chhabra DB (2019) Tortoises and Freshwater Turtles in illegal trade in India. TRAFFIC India, New Delhi.
- Chatterjee B (2019) 650 mongooses killed for 29,166 fur paint brushes seized across Maharashtra: WCCB. <https://www.hindustantimes.com/mumbai-news/650-mongooses-killed-for-29-166-fur-paint-brushes-seized-across-maharashtra-wccb/story-xG8MRq4BT-fvNxjp2uGHleN.html> [Accessed on 12.01.2021]
- Ghosh-Harihar M, An R, Athreya R, Borthakur U, Chanchani P, Chetry D, Datta A, Harihar A, Karanth KK, Mariyam D, Mohan D, Onial M, Ramakrishnan U, Robin VV, Saxena A, Shahabuddin G, Thatte P, Vijay V, Wacker K, Mathur VB, Pimm SL, Price TD (2019) Protected areas and biodiversity conservation in India. *Biological Conservation* 237: 114–124. <https://doi.org/10.1016/j.biocon.2019.06.024>
- Heinrich S, Leupen BTC, Bruslund S, Owen A, Shepherd CR (2021) A case for better international protection of the Sumatran Laughingthrush (*Garrulax bicolor*). *Global Ecology and Conservation* 25: e01414. <https://doi.org/10.1016/j.gecco.2020.e01414>
- IPBES (2019) Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. IPBES secretariat, Bonn.
- Jain M (2020) Excess baggage: how wildlife is trafficked by air in and out of India. <https://india.mongabay.com/2020/07/excess-baggage-how-wildlife-is-trafficked-by-air-in-and-out-of-india/> [Accessed on 02.10.2020]
- Janssen J, Krishnasamy K (2018) Left hung out to dry: How inadequate international protection can fuel trade in endemic species – The case of the earless monitor. *Global Ecology and Conservation* 16: e00464. <https://doi.org/10.1016/j.gecco.2018.e00464>
- Janssen J, Shepherd CR (2018) Challenges in documenting trade in non CITES-listed species: A case study on crocodile skins (*Tribolonotus spp.*). *Journal of Asia-Pacific Biodiversity* 11(4): 476–481. <https://doi.org/10.1016/j.japb.2018.09.003>
- Maheshwari A, Midha N, Paliwal A, Sharma BK, Ghose PS, Shreshtha P, Paranjpe S (2013) A Preliminary overview of the Subspecies of Red Fox and Tibetan Sand Fox in the Himalaya, India. *Journal of the Bombay Natural History Society* 110(3): 193–196.
- Misra M (2003) Evolution, impact and effectiveness of domestic wildlife trade bans in India. In: Oldfield S (Ed.) *The Trade in Wildlife – Regulation for Conservation*. Taylor & Francis Group, London, 78–85.
- Mudappa D, Helgen K, Nandini R (2016) *Viverra civettina*. <https://doi.org/10.2305/IUCN.UK.2016-1.RLTS.T23036A45202281.en> [Accessed on 12.01.2021]
- Stanford CB, Iverson JB, Rhodin AG, van Dijk PP, Mittermeier RA, Kuchling G, Berry KH, Bertolero A, Bjorndal KA, Blanck TE (2020) Turtles and tortoises are in trouble. *Current Biology* 30(12): R721–R735. <https://doi.org/10.1016/j.cub.2020.04.088>
- UNEP (2019) Spotlight on India's soaring wildlife crime. <https://www.unenvironment.org/news-and-stories/story/spotlight-indias-soaring-wildlife-crime> [Accessed on 12.01.2021]

- UNEP-WCMC (2015) Overview of the conservation status of and trade in species currently subject to EU Reservations: *Vulpes vulpes griffithi*, *Vulpes vulpes montana*, *Vulpes vulpes pusilla*, *Mustela altaica*, *Mustela erminea ferghanae*, *Mustela kathiah* and *Mustela sibirica*. UNEP-WCMC, Cambridge.
- UNEP-WCMC (2018) EU Wildlife Trade 2016: Analysis of the European Union and candidate countries' annual reports to CITES 2016, Brussels.
- UNODC (2017) Africa-Asia Pacific Symposium on Strengthening Legal Frameworks to Combat Wildlife Crime. United Nations Inter-Agency Task Force on Illicit Trade in Wildlife and Forest Products. Symposium Report. Bangkok, 4–5 July 2017. <https://www.unodc.org/documents/southeastasiaandpacific/Publications/wildlife/Africa-AsiaPac-Wildlife-law-symposium-REPORT-FINAL-SHARE.PDF> [Accessed on 22.04.2021]
- UNODC (2020) World Wildlife Crime Report. United Nations Office on Drugs and Crime, Vienna.
- Van Uhm DP (2016) The illegal wildlife trade: Inside the world of poachers, smugglers and traders. Springer, New York. <https://doi.org/10.1007/978-3-319-42129-2>
- Wijnstekers W (2018) The Evolution of CITES – 11th edition. International Council for Game and Wildlife Conservation.
- Willoek A, Burgener M, Sancho A (2004) First Choice or Fallback? An examination of issues relating to the application of Appendix III of CITES to marine species. TRAFFIC International, Cambridge.
- Wilson AE, Mittermeier RA, Rylands AB (2013) Handbook of the Mammals of the World. Lynx Edicions in association with Conservation International and IUCN, Barcelona.
- Wong R, Krishnasamy K (2019) Skin and Bones Unresolved: An Analysis of Tiger Seizures from 2000–2018. TRAFFIC, Southeast Asia Regional Office, Petaling Jaya, Selangor.
- WWF (2018) Living Planet Report 2018: Aiming Higher. WWF, Gland.
- Zaugg J, Suri M (2019) Poacher manhunt exposes murky world of Indian wildlife trafficking, where bear bile is big business. <https://edition.cnn.com/2019/10/25/asia/bear-bile-trafficking-intl-hnk/index.html> [Accessed on 12.01.2021]

Supplementary material I

Table S1

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Data type: Government trade records

Explanation note: Trade data reported in LEMIS for the Malabar civet (*Viverra civetina*) from 2000 – 2019.

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